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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,906	02/22/2002	Hitoshi Narusawa	1660.1001	7374

21171            7590            11/24/2003  
STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
2644	3

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/079,906	NARUSAWA, HITOSHI
Examiner	Art Unit	
Justin Michalski	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 February 2002.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3,4,6 and 8 is/are rejected.
- 7) Claim(s) 2,5, and 7 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Kandel et al. (US Patent 6,353,671).

Regarding, Claim 1, Kandel et al. discloses an acoustic signal processor (Figure 4) comprising: a determination unit (mixer 113) for determining a frequency band having the highest energy level out of the frequency bands constituting the input acoustic signals (Kandel et al. discloses separates signal components including first formant (i.e. highest energy level) (Column 8, line 66 through Column 9, line 15) and frequency of about 1.0KHz as shown in Figure 2 (Column 1, line 20); and a variable equalizer (references 114, 115, and 116) having characteristic for maintaining the energy level substantially at a constant level for frequency bands lower than the frequency band determined by said determination unit (Figure 2 discloses low frequencies maintained at a constant level), and for increasing the amplification degree of the energy level as the frequency increases for the frequency bands higher than the frequency band

determined by said determination unit (Figure 2 discloses upper frequencies with increased amplification).

Regarding Claim 3, Kandel et al. further discloses a signal processor (Figure 4) which inherently contains a delay of the input acoustic signals (input to 112) while traveling to the variable equalizer (references 114, 115, and 116).

Regarding Claim 6, Kandel et al. further discloses the amplification degree of the variable equalizer is in the 15 to 25 dB range as disclosed in Figure 2.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kandel et al. as applied to claim 1 above, and further in view of Tong et al. (US Patent 4,441,202).

As stated above apropos of claim 1 Kandel et al. anticipates all elements of that claim but does not disclose an A/D converter at the output side of the variable equalizer.

Tong et al. discloses an audio processor which consists of computer 14 and data formatter 15 (i.e. A/D converter) to convert analog information of frequency bands to digital data suitable transmission to an implanted prosthesis (Column 5, lines 1-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an A/D converter to convert analog input data into digital

data when a digital output signal needed to conform with the input requirements of the subsequent component.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kandel et al. (US patent 6,353,671) in view of Tong et al. (US Patent 4,441,202).

Kandel et al. discloses an acoustic signal processor (Figure 4), comprising: a signal processor for generating acoustic signals (microphone 112), performing frequency analysis on the acoustic signals (Kandel et al. discloses amplifying selected voice frequency bands (i.e. frequency analysis) (Column 1, lines 6-12), and amplifying the frequency bands higher than the frequency band at which the energy level is the highest (Kandel et al. discloses separates signal components including first formant (i.e. highest energy level) (Column 8, line 66 through Column 9, line 15) and Figure 2 discloses low frequencies maintained at a constant level and amplifying the energy level as the frequency increases for the frequency bands above the first formant at 1.0KHz (Column 7, line20). Kandel et al. does not disclose the processor being a digital processor or digitizing input acoustic signals. However, one of ordinary skill in the art at the time the invention was made would know that signal processing could be done digitally using integrated circuit technology and digital signal processing to produce more error free data which would include transforming the audio input into a digital signal.

***Allowable Subject Matter***

6. Claims 2, 5, and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JIM



XU MEI  
**PRIMARY EXAMINER**